



Revision Date 2022-09-12

Revision Number 4

1. Identification

A. Product identifier

Product Name PrimeScript™ RT Enzyme Mix I
Product Code SD2230

B. Relevant identified uses of the substance or mixture and uses advised against

Identified uses For research use only. Not for use in diagnostic procedures
Uses advised against No information available

C. Supplier's details

Supplier

Japan:

Takara Bio Inc.
Nojihigashi 7-4-38
Kusatsu, Shiga 525-0058, Japan
Phone: +81.77.565.6972
Web: www.takara-bio.com

Korea:

Takara Korea Biomedical Inc.
601, New T Castle, 108, Gasan Digital 2-ro, Geumcheon-gu
Seoul 08506, Korea
Phone: +82.2.2081.2525
Web: www.takara.co.kr

For further information, please contact:

Emergency telephone number In case of emergency, call PERS (Professional Emergency Resource Services) 1-800-633-8253 (US) or 801-629-0667 (international).

2. Hazard(s) identification

A. Classification of the substance or mixture

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 2

B. GHS Label elements, including precautionary statements

Hazard symbols



Signal word

Warning

Hazard Statements

H315 - Causes skin irritation

H332 - Harmful if inhaled

Precautionary Statements - Prevention

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

P271 - Use only outdoors or in a well-ventilated area

P264 - Wash face, hands and any exposed skin thoroughly after handling

P280 - Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

P321 - Specific treatment (see .? on this label)

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P332 + P313 - If skin irritation occurs: Get medical advice/attention

P362 - Take off contaminated clothing and wash before reuse

P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

P312 - Call a POISON CENTER or doctor/physician if you feel unwell

C. Other hazards which do not result in classification

No information available.

3. Composition/information on ingredients

Substance

Not applicable

Mixture

Chemical name	Common name and synonyms	CAS No	Other identifier number	Weight-%	Approval number	Expiration date
Glycerol	No information available	56-81-5	KE-29297	60 - 70	-	-
Water	No information available	7732-18-5	KE-35400	30 - 40	-	-
Tween 20	No information available	9005-64-5	KE-31681	0.1 - 1	-	-
RNase Inhibitor	No information available	CAS-INHIBITOR	-	0.1 - 1	-	-
PrimeScript Reverse Transcriptase	No information available	CAS-PROPRIETARY	-	0.1 - 1	-	-
Sodium chloride	No information available	7647-14-5	KE-31387	0.1 - 1	-	-
HEPES	No information available	7365-45-9	-	0.1 - 1	-	-
Potassium chloride	No information available	7447-40-7	KE-29086	0.1 - 1	-	-
Tris (hydroxymethyl) aminomethane	No information available	77-86-1	KE-01403	0.1 - 1	-	-
Dithiothreitol [DTT]	No information available	3483-12-3	-	< 0.1	-	-
Ethylenediaminetetraac	No information	6381-92-6	-	< 0.1	-	-

etic acid disodium salt dihydrate	available					
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4. First-aid measures

A. In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

B. In case of skin contact

Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

C. In case of inhalation

Get medical attention immediately if symptoms occur. Remove to fresh air. If symptoms persist, call a physician. If breathing has stopped, give artificial respiration. Get medical attention immediately.

D. In case of ingestion

Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get medical attention.

E. Indication of immediate medical attention and special treatment needed, if necessary

General advice Show this safety data sheet to the doctor in attendance.

Note to physicians Treat symptomatically.

Symptoms Coughing and/ or wheezing. Difficulty in breathing.

Self-protection of the first aider Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid breathing vapors or mists. Use personal protective equipment as required. See section 8 for more information.

5. Fire-fighting measures

A. Suitable (and unsuitable) extinguishing media

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

B. Specific hazards arising from the chemical

No information available.

C. Special Protective Equipment for Firefighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

A. Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Avoid breathing vapors or mists. Use personal protective equipment as required.

Other information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

B. Environmental precautions

Prevent further leakage or spillage if safe to do so.

C. Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.

7. Handling and storage

A. Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes or clothing. Take off contaminated clothing and wash before reuse. Handle in accordance with good industrial hygiene and safety practice. Avoid breathing vapors or mists. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product.

B. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children.

General hygiene considerations Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product.

8. Exposure controls/personal protection

A. Control Parameters**Occupational exposure limits**

Chemical name	OEL	PEL
Glycerol	TWA 10 mg/m ³	-

B. Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Environmental exposure controls No information available.

C. Personal Protective Equipment

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Eye protection No special protective equipment required.

Hand protection Wear suitable gloves. Impervious gloves.

Body protection Wear suitable protective clothing. Long sleeved clothing.

9. Physical and chemical properties

Information on basic physical and chemical properties

A. Appearance	Clear, colorless
Physical State	Liquid
Color	Clear
B. Odor	Unpleasant
C. Odor Threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
D. pH	No data available	None known
E. Melting point / freezing point	No information available	None known
F. Initial boiling point and boiling range	No information available	None known
G. Flash point	No information available	Open cup
H. Evaporation Rate	No information available	None known
I. Flammability (solid, gas)	No information available	None known
J. Upper/lower flammability or explosive limits		
Upper flammability limit:		No information available
Lower flammability limit:		No information available
K. Vapor pressure	No information available	None known
L. Solubility(ies)		
Water solubility	No information available	None known
Solubility in other solvents	No information available	None known
M. Vapor density	No information available	None known
N. Specific Gravity	No information available	None known
O. Partition coefficient: n-octanol/water	No information available	None known
P. Autoignition Point	392.8 °C / 739 °F	None known
Q. Decomposition temperature		None known
R. Viscosity		
Kinematic viscosity	No information available	None known
Dynamic Viscosity	No information available	None known
S. Molecular weight	No information available	
Other information		
Explosive properties	No information available	
Oxidizing properties	No information available	
Softening point	No information available	
VOC content	No information available	
Liquid Density	No information available	

10. Stability and reactivity

A. Chemical stability and possibility of hazardous reactions

Stability Stable under normal conditions.

Possibility of hazardous reactions None under normal processing.

Explosion Data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

B. Conditions to avoid

Excessive heat.

C. Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents.

D. Hazardous Decomposition Products None known based on information supplied

11. Toxicological information

A. Information on the likely routes of exposure**Product Information**

Inhalation	May cause irritation of respiratory tract. Specific test data for the substance or mixture is not available. Harmful by inhalation. (based on components).
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).
Symptoms	Redness. May cause redness and tearing of the eyes. Coughing and/ or wheezing.

B. Health hazards information**Acute toxicity****Numerical measures of toxicity**

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	19,861.10 mg/kg
ATEmix (dermal)	15,863.70 mg/kg
ATEmix (inhalation-dust/mist)	4.3624 mg/l

Unknown acute toxicity

2.99709 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Glycerol	= 12600 mg/kg (Rat)	> 10 g/kg (Rabbit)	> 2.75 mg/L (Rat) 4 h
Water	> 90 mL/kg (Rat)	-	-
Tween 20	= 37000 mg/kg (Rat)	-	> 5.1 mg/L (Rat) 4 h
Sodium chloride	= 3 g/kg (Rat)	> 10000 mg/kg (Rabbit)	> 42 mg/L (Rat) 1 h
HEPES	> 2000 mg/kg (Rat)	> 2000 mg/kg (Rat)	-
Potassium chloride	= 2600 mg/kg (Rat)	-	-
Tris (hydroxymethyl) aminomethane	= 5900 mg/kg (Rat)	> 5000 mg/kg (Rat)	-

Skin corrosion/irritation

Classification based on data available for ingredients. Irritating to skin.

Serious eye damage/irritation

No information available.

Respiratory or skin sensitization No information available.

Carcinogenicity No information available.

Germ cell mutagenicity No information available.

Reproductive toxicity No information available.

Specific target organ toxicity (STOT) – single exposure No information available.

Specific target organ toxicity (STOT) – repeated exposure No information available.

Target organ effects Kidney. Respiratory system. Eyes. Skin.

Aspiration hazard No information available.

12. Ecological information

A. Ecotoxicity

Percentage for unknown hazards 0.99709 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Glycerol	-	LC50: 51 - 57mL/L (96h, <i>Oncorhynchus mykiss</i>)	-	-
Sodium chloride	-	LC50: 5560 - 6080mg/L (96h, <i>Lepomis macrochirus</i>) LC50: =12946mg/L (96h, <i>Lepomis macrochirus</i>) LC50: 6020 - 7070mg/L (96h, <i>Pimephales promelas</i>) LC50: =7050mg/L (96h, <i>Pimephales promelas</i>) LC50: 6420 - 6700mg/L (96h, <i>Pimephales promelas</i>) LC50: 4747 - 7824mg/L (96h, <i>Oncorhynchus mykiss</i>)	-	EC50: =1000mg/L (48h, <i>Daphnia magna</i>) EC50: 340.7 - 469.2mg/L (48h, <i>Daphnia magna</i>)
HEPES	-	LC50: >100mg/L (96h, <i>Danio rerio</i>)	-	-
Potassium chloride	EC50: =2500mg/L (72h, <i>Desmodesmus subspicatus</i>)	LC50: =1060mg/L (96h, <i>Lepomis macrochirus</i>) LC50: 750 - 1020mg/L (96h, <i>Pimephales promelas</i>)	-	EC50: =825mg/L (48h, <i>Daphnia magna</i>) EC50: =83mg/L (48h, <i>Daphnia magna</i>)

B. Persistence and degradability No information available.

C. Bioaccumulative potential There is no data for this product.

Component Information

Chemical name	Partition coefficient
Glycerol	-1.75
HEPES	-3.85

D. Mobility in soil No information available.

Mobility No information available.

E. Other adverse effects No information available.

13. Disposal considerations

A. Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

B. Disposal considerations

Contaminated packaging Do not reuse empty containers.

14. Transport information

A. UN number or ID number Not regulated
B. UN proper shipping name Not regulated
C. Transport hazard class(es) Not regulated
D. Packing group Not regulated
E. Marine pollutant Not applicable
F. Special precautions for user Not regulated

15. Regulatory information

A. Industrial Safety and Health Law Not applicable

Prohibited substance Not applicable

Substances Requiring Permission Not applicable

Harmful substances subject to control Not applicable

Harmful agents subject to work environment monitoring Not applicable

Harmful agents subject to workers requiring health examination Not applicable

Harmful or dangerous substances subject to submission of process safety reports Not applicable

Control parameters

See section 8 for national exposure control parameters

Chemical name	OEL	PEL
Glycerol	Applicable	Not applicable

B. Chemicals Control Act Not applicable
Chemicals Control Act (CCA) - Accident Precaution Chemicals Not applicable

Act on Registration, Evaluation, etc. of Chemicals (K-REACH) Applicable

Chemical name	Existing substances subject to registration	Existing substances not likely to be subject to registration	Existing substances known to be of very low risk
Glycerol	Not applicable	Applicable	Not applicable
Water	Not applicable	Not applicable	Applicable

C. Safety Control of Dangerous Substances Act Not applicable

D. Wastes Management Dispose of waste in accordance with environmental legislation.

E. Other Regulations No information available

International Inventories

IECSC

Legend:

TSCA - *United States Toxic Substances Control Act Section 8(b) Inventory*

DSL/NDSL - *Canadian Domestic Substances List/Non-Domestic Substances List*

EINECS/ELINCS - *European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*

ENCS - *Japan Existing and New Chemical Substances*

IECSC - *China Inventory of Existing Chemical Substances*

KECL - *Korean Existing and Evaluated Chemical Substances*

PICCS - *Philippines Inventory of Chemicals and Chemical Substances*

AICS - *Australian Inventory of Chemical Substances*

16. Other information

A. Information source and references

Prepared By No information available.

Key or legend to abbreviations and acronyms used in the safety data sheet

ACGIH ACGIH (American Conference of Governmental Industrial Hygienists)

IMDG International Maritime Dangerous Goods (IMDG)

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	Time weighted average	STEL	Short term exposure limit
Ceiling	Maximum limit value	*	Skin designation
**	Hazard Designation	+	Sensitizers

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)

U.S. Environmental Protection Agency ChemView Database

European Food Safety Authority (EFSA)

EPA (Environmental Protection Agency)

Acute Exposure Guideline Level(s) (AEGl(s))

U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act

U.S. Environmental Protection Agency High Production Volume Chemicals

Food Research Journal

Hazardous Substance Database

International Uniform Chemical Information Database (IUCLID)

Japan GHS Classification

Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)

NIOSH (National Institute for Occupational Safety and Health)

National Library of Medicine's ChemID Plus (NLM CIP)

National Library of Medicine's PubMed database (NLM PUBMED)

National Toxicology Program (NTP)

New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

B Revision number and date

Revision Number	4
Revision Date	2022-09-12

C. Other**Disclaimer**

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End of Safety Data Sheet